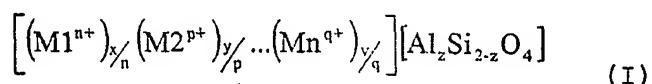


CLAIMS

5 1. A zeolite material comprising releasably adsorbed nitric oxide.

2. A zeolite material according to claim 1, wherein the zeolite has the following general formula (I):

10



wherein M1 and M2 ... Mn are extra framework metal cations of elements selected from the group consisting of 15 Li, Na, K, Ca, Mg, Fe, Cu, Ru, Rh, Co, Ni, Zn and Ag, or are chosen from small organic cations such as $N(R_1)_a(R_2)_b^+$ wherein R₁ and R₂ are independently selected from H, -CH₃, -CH₂CH₃, or -CH₂CH₂CH₃, and a and b are independently 0, 1, 2, 3 or 4 such that a + b = 4;

20 x ranges from zero to nz,

y ranges from zero to pz, and

v ranges from zero to qz;

subject to the condition that $x/n + y/p + \dots + v/q = z$;

wherein

25 z is the number of silicon atoms replaced by aluminium atoms in the zeolite framework;

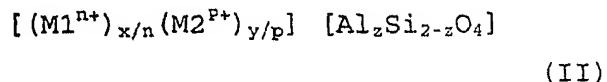
n+, p+ and q+ are the charges of the extra framework metal cations, and may individually take the values of +1, +2 or +3.

30 3. A zeolite material according to claim 2, wherein M1 and/or M2 are NH₄⁺.

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4. A zeolite material according to any preceding claim having, the following general formula (II):

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wherein M1 and M2 are extra framework metal cations of
10 elements selected from the group consisting of Li, Na, K, Ca, Mg, Fe, Cu, Ru, Rh, Co, Ni, Zn and Ag, or are chosen from small organic cations such as $N(R_1)_a(R_2)_b^+$ wherein R_1 and R_2 are independently selected from H, -CH₃, -CH₂CH₃, or -CH₂CH₂CH₃, and a and b are independently 0, 1, 2, 3
15 or 4 such that a + b = 4;
x may range from zero to nz, and
y may range from zero to pz, subject to the condition
that $x/n + y/p = z$;
wherein
20 z is the number of silicon atoms replaced by aluminium atoms in the zeolite framework;
n+ and p+ are the charges of the extra framework metal cations and may individually take the values of +1, +2 or +3.
25

5. A zeolite material according to any previous claim, in the form of a powder or a monolith.

6. A zeolite according to claim 5 wherein said monolith
30 is formed by compression of a zeolite powder or by mixing a powdered zeolite with a binder.

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7. A zeolite material according to claim 6, wherein the binder is selected from ceramic binders, polymeric binders and other polymers.

5 8. A zeolite material according to any previous claim which is sealed inside airtight packaging.

9. A method of preparing a zeolite material which comprises releasably adsorbed nitric oxide, said method 10 comprising the steps of providing a zeolite material and contacting said material with nitric oxide gas.

10. A method according to claim 9 wherein the zeolite material is fully or partially dehydrated to remove water 15 from the zeolite channels prior to contacting the zeolite material with nitric oxide gas.

11. A method according to claim 9 or claim 10, wherein the zeolite material is contacted with nitric oxide gas 20 at a temperature of from -100°C to 50°C.

12. A method according to any one of claims 9 to 11 wherein the nitric oxide is provided as substantially pure nitric oxide or as a mixture of nitric oxide and a 25 carrier gas.

13. A method according to claim 12 wherein the carrier gas is an inert gas chosen from helium, argon or other inert gas including mixtures thereof.

30 14. A method according to any one of claims 9 to 13 wherein the zeolite is contacted with nitric oxide gas at a pressure of from atmospheric pressure up to a pressure of 10 bar.

15. A zeolite material comprising releasably adsorbed nitric oxide for use in surgery and/or therapy.

5 16. A pharmaceutical preparation comprising a zeolite material comprising releasably adsorbed nitric oxide together with a pharmaceutical carrier.

10 17. Use of a zeolite material comprising releasably adsorbed nitric oxide in the preparation of a medicament for use in the treatment or prophylaxis of disease or medical conditions.

15 18. Use according to claim 17 wherein the diseases or medical conditions which may be treated include infections of the skin, including dermatophyte fungi, leishmaniasis, molluscum and papilloma virus, and mycobacterium infections; therapeutic applications in anti-neoplastic activities; immune response modification; 20 treatment of Raynaud's disease; wound healing; skin pigment modification; treatment of restonsis; treatment of psoriasis, eczema, and skin cancer (melanoma); therapies for bacterial problems, the reduction of severe foot or body odour, and treatment of Methicillin 25 Resistant Staphylococcus Aureus infections.

19. A medical article comprising a zeolite material.

30 20. A medical article according to claim 19, wherein the zeolite material of the medical article is provided without nitric oxide loaded therein.

21. A medical article according to claim 19, wherein the zeolite material of the medical article is provided as a

zeolite material comprising releasably adsorbed nitric oxide.

22. A medical article according to any one of claims 19 to 21 wherein said medical article is chosen from a 5 stent, catheters, wound dressings, bandages, self-adhesive plasters and patches.

23. Use of a zeolite comprising releasably adsorbed nitric oxide in a cosmetic and/or personal hygiene 10 application.

24. A cosmetic and/or personal hygiene product comprising a zeolite which comprises releasably adsorbed nitric oxide.

15 25. A cosmetic and/or personal hygiene product according to claim 24 which is selected from a cosmetic preparation, deodorant, skin preparation, anti-aging skin preparation, hair preparation and depilatory preparation.

20 26. A method of releasing nitric oxide comprising the steps of

(i) providing a zeolite material comprising releasably adsorbed nitric oxide;
25 (ii) contacting said zeolite material with a medium into which said nitric oxide is to be released.

27. A method according to claim 26, wherein the medium into which the nitric oxide is to be released is air or 30 is an aqueous medium.

28. A method according to claim 26 or claim 27 wherein the release is performed inside an animal body, topically to an animal body or in non-body applications.

29. A method according to claim 28, wherein the release in non-body applications includes release into cell cultures.

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30. A method according to any one of claims 26 to 30, wherein the release is performed at room or body temperature.

10 31. A method of treatment or prophylaxis of an individual in need thereof comprising providing a zeolite comprising releasably adsorbed nitric oxide and contacting said zeolite with said individual.

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